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SEQUENCE LISTING

<110> HIATT, ANDREW C.
HEIN, MICH B.
FITCHEN, JOHN H.

<120> J CHAIN POLYPEPTIDE TARGETING MOLECULE LINKED TO AN IMAGING AGENT

<130> EPI3003C

<140> 10/062,467
<141> 2002-02-05

<150> 08/782,480
<151> 1997-01-10

<150> 09/005,167
<151> 1998-01-09

<160> 93

<170> PatentIn Ver. 2.1

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1 5 10 15

Arg Ile Thr Ser Arg Ile Ile Arg Ser Ser Glu Asp Pro Asn Glu Asp
20 25 30

Ile Val Glu Arg Asn Ile Arg Ile Ile Val Pro Leu Asn Asn Arg Glu
35 40 45

Asn Ile Ser Asp Pro Thr Ser Pro Leu Arg Thr Arg Pro Val Tyr His
50 55 60

Leu Ser Asp Leu Cys Lys Lys Cys Asp Pro Thr Glu Val Glu Leu Asp
65 70 75 80

Asn Gln Ile Val Thr Ala Thr Gln Ser Asn Ile Cys Asp Glu Asp Ser
85 90 95

Ala Thr Glu Thr Cys Tyr Thr Tyr Asp Arg Asn Lys Cys Tyr Thr Ala
100 105 110

Val Val Pro Leu Val Tyr Gly Gly Glu Thr Lys Met Val Glu Thr Ala
115 120 125

Leu Thr Pro Asp Ala Cys Tyr Pro Asp
130 135

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<213> Mus sp.

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Gln Asp Glu Asn Glu Arg Ile Val Val Asp Asn Lys Cys Lys Cys Ala
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Arg Ile Thr Ser Arg Ile Ile Pro Ser Ala Glu Asp Pro Ser Gln Asp
20 25 30
Ile Val Glu Arg Asn Val Arg Ile Ile Val Pro Leu Asn Ser Arg Glu
35 40 45
Asn Ile Ser Asp Pro Thr Ser Pro Met Arg Thr Lys Pro Val Tyr His
50 55 60
Leu Ser Asp Leu Cys Lys Lys Cys Asp Thr Thr Glu Val Glu Leu Glu
65 70 75 80
Asp Gln Val Val Thr Ala Ser Gln Ser Asn Ile Cys Asp Ser Asp Ala
85 90 95
Glu Thr Cys Tyr Thr Tyr Asp Arg Asn Lys Cys Tyr Thr Asn Arg Val
100 105 110
Lys Leu Ser Tyr Arg Gly Gln Thr Lys Met Val Glu Thr Ala Leu Thr
115 120 125
Pro Asp Ser Cys Tyr Pro Asp
130 135

<210> 3
<211> 137
<212> PRT
<213> Oryctolagus cuniculus

<400> 3
Asp Asp Glu Ala Thr Ile Leu Ala Asp Asn Lys Cys Met Cys Thr Arg
1 5 10 15
Val Thr Ser Arg Ile Ile Pro Ser Thr Glu Asp Pro Asn Glu Asp Ile
20 25 30
Val Glu Arg Asn Ile Arg Ile Val Val Pro Leu Asn Asn Arg Glu Asn
35 40 45
Ile Ser Asp Pro Thr Ser Pro Leu Arg Arg Asn Pro Val Tyr His Leu
50 55 60
Ser Asp Val Cys Lys Lys Cys Asp Pro Val Glu Val Glu Leu Glu Asp
65 70 75 80
Gln Val Val Thr Ala Thr Gln Ser Asn Ile Cys Asn Glu Asp Asp Gly
85 90 95

Val Pro Glu Thr Cys Tyr Met Tyr Asp Arg Asn Lys Cys Tyr Thr Thr
 100 105 110

Met Val Pro Leu Arg Tyr His Gly Glu Thr Lys Met Val Gln Ala Ala
 115 120 125

Leu Thr Pro Asp Ser Cys Tyr Pro Asp
 130 135

<210> 4
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 <213> Bos sp.

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 20 25 30

Val Glu Arg Asn Ile Arg Ile Ile Val Pro Leu Asn Thr Arg Glu Asn
 35 40 45

Ile Ser Asp Pro Thr Ser Pro Leu Arg Thr Glu Pro Lys Tyr Asn Leu
 50 55 60

Ala Asn Leu Cys Lys Lys Cys Asp Pro Thr Glu Ile Glu Leu Asp Asn
 65 70 75 80

Gln Val Phe Thr Ala Ser Gln Ser Asn Ile Cys Pro Asp Asp Asp Tyr
 85 90 95

Ser Glu Thr Cys Tyr Thr Tyr Asp Arg Asn Lys Cys Tyr Thr Thr Leu
 100 105 110

Val Pro Ile Thr His Arg Gly Val Thr Arg Met Val Lys Ala Thr Leu
 115 120 125

Thr Pro Asp Ser Cys Tyr Pro Asp
 130 135

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 <213> Rana sp.

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 <222> (47)
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20 25 30
Glu Arg Asn Ile Gln Ile Thr Ile Pro Thr Ser Ser Arg Met Xaa Ile
35 40 45
Ser Asp Pro Tyr Ser Pro Leu Arg Thr Gln Pro Val Tyr Asn Leu Trp
50 55 60
Asp Ile Cys Gln Lys Cys Asp Pro Val Gln Leu Glu Ile Gly Gly Ile
65 70 75 80
Pro Val Leu Ala Ser Gln Pro Xaa Xaa Ser Xaa Pro Asp Asp Glu Cys
85 90 95
Tyr Thr Thr Glu Val Asn Phe Lys Lys Val Pro Leu Thr Pro Asp
100 105 110
Ser Cys Tyr Glu Tyr Ser Glu
115

<210> 6
<211> 128
<212> PRT
<213> Lumbricus sp.

<400> 6
Asn Lys Cys Met Cys Thr Arg Val Thr Ala Arg Ile Arg Gly Thr Arg
1 5 10 15
Glu Asp Pro Asn Glu Asp Ile Val Glu Arg Tyr Ile Arg Ile Asn Val
20 25 30
Pro Leu Lys Asn Arg Gly Asn Ile Ser Asp Pro Thr Ser Pro Leu Arg
35 40 45
Asn Gln Pro Val Tyr His Leu Ser Pro Ser Cys Lys Lys Cys Asp Pro
50 55 60
Tyr Glu Asp Gly Val Val Thr Ala Thr Glu Thr Asn Ile Cys Tyr Pro
65 70 75 80
Asp Gln Gly Val Pro Gln Ser Cys Arg Asp Tyr Cys Pro Glu Leu Asp
85 90 95
Arg Asn Lys Cys Tyr Thr Val Leu Val Pro Pro Gly Tyr Thr Gly Glu
100 105 110

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 115 120 125

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<211> 421
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<220>
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<222> (7)..(414)

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Asp Gln Glu Asp Glu Arg Ile Val Leu Val Asp Asn Lys Cys Lys Cys
 -1   1      5          10

gct cgt att act tct aga atc atc cgt agc tca gag gac cca aat gaa 96
Ala Arg Ile Thr Ser Arg Ile Ile Arg Ser Ser Glu Asp Pro Asn Glu
 15           20          25          30

gat ata gtc gaa cgt aac atc cgt atc atc gtc cca ctg aat aac cgg 144
Asp Ile Val Glu Arg Asn Ile Arg Ile Ile Val Pro Leu Asn Asn Arg
 35           40          45

gag aat atc tca gat cct aca agt ccg ttg cgc aca cgc ttc gta tac 192
Glu Asn Ile Ser Asp Pro Thr Ser Pro Leu Arg Thr Arg Phe Val Tyr
 50           55          60

cac ctg tca gat ctg tgt aag aag tgt gat cca aca gag gta gag ctg 240
His Leu Ser Asp Leu Cys Lys Lys Cys Asp Pro Thr Glu Val Glu Leu
 65           70          75

gac aat cag ata gtc act gcg act caa agc aac att tgc gat gag gac 288
Asp Asn Gln Ile Val Thr Ala Thr Gln Ser Asn Ile Cys Asp Glu Asp
 80           85          90

agc gct aca gaa acc tgc agc acc tac gat agg aac aaa tgc tac acg 336
Ser Ala Thr Glu Thr Cys Ser Thr Tyr Asp Arg Asn Lys Cys Tyr Thr
 95           100         105         110

gcc gtg gtt ccg ctc gtg tat ggt gga gag aca aaa atg gtg gaa act 384
Ala Val Val Pro Leu Val Tyr Gly Gly Glu Thr Lys Met Val Glu Thr
 115          120         125

gcc ctt acg ccc gat gca tgc tat ccg gac tgaattc 421
Ala Leu Thr Pro Asp Ala Cys Tyr Pro Asp
 130          135

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<210> 8
<211> 215
<212> DNA
<213> Homo sapiens

<220>
<221> CDS
<222> (1)..(213)

<400> 8
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Asp Gln Lys Cys Lys Cys Ala Arg Ile Thr Ser Arg Ile Ile Arg Ser
    1           5           10          15

tca gag gac cca aat gaa gat ata gtc gaa cgt aac atc cgt atc atc      96
Ser Glu Asp Pro Asn Glu Asp Ile Val Glu Arg Asn Ile Arg Ile Ile
    20          25          30

gtc cca ctg aat aac cgg gag aat atc tca gat cct aca agt ccg ttg      144
Val Pro Leu Asn Asn Arg Glu Asn Ile Ser Asp Pro Thr Ser Pro Leu
    35          40          45

cgc aca cgc ttc gta tac cac ctg tca gat ctg tgt aag aag gat gag      192
Arg Thr Arg Phe Val Tyr His Leu Ser Asp Leu Cys Lys Lys Asp Glu
    50          55          60

gac agc gct aca gaa acc tgc tg
Asp Ser Ala Thr Glu Thr Cys      215
    65          70

<210> 9
<211> 140
<212> DNA
<213> Homo sapiens

<400> 9
ctagaatcat ccgttagctca gaggacccaa atgaagatat agtcgaacgt aacatccgta 60
tcatcgcccc actgaataac cgggagaata tctcagatcc tacaagtccg ttgcgcacac 120
gcttcgtata ccacctgtca                                140

<210> 10
<211> 31
<212> DNA
<213> Homo sapiens

<400> 10
gatcagaagt gcaagtgtgc tcgtattact t      31

<210> 11
<211> 44

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<212> DNA
<213> Homo sapiens

<220>
<221> CDS
<222> (1) .. (42)

<400> 11
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Asp Leu Cys Lys Lys Asp Glu Asp Ser Ala Thr Glu Thr Cys
    1           5           10

<210> 12
<211> 109
<212> DNA
<213> Homo sapiens

<400> 12
gcacctacga taggaacaaa tgctacacgg ccgtggttcc gctcgtgtat ggtggagaga 60
caaaaaatggt gaaaaactgcc cttacgccccg atgcatgcta ccctgactg          109

<210> 13
<211> 286
<212> DNA
<213> Homo sapiens

<220>
<221> CDS
<222> (1) .. (279)

<400> 13
gat cag aag tgc aag tgt gct cgt att act tct aga atc atc cgt agc      48
Asp Gln Lys Cys Lys Cys Ala Arg Ile Thr Ser Arg Ile Ile Arg Ser
    1           5           10           15

tca gag gac cca aat gaa gat ata gtc gaa cgt aac atc cgt atc atc      96
Ser Glu Asp Pro Asn Glu Asp Ile Val Glu Arg Asn Ile Arg Ile Ile
    20          25          30

gtc cca ctg aat aac cgg gag aat atc tca gat cct aca agt ccg ttg      144
Val Pro Leu Asn Asn Arg Glu Asn Ile Ser Asp Pro Thr Ser Pro Leu
    35          40          45

cgc aca cgc ttc gta tac cac ctg tca gat ctg tgt aag aag tgt gat      192
Arg Thr Arg Phe Val Tyr His Leu Ser Asp Leu Cys Lys Lys Cys Asp
    50          55          60

cca aca gag gta gag ctg gac aat cag ata gtc act gcg act caa agc      240
Pro Thr Glu Val Glu Leu Asp Asn Gln Ile Val Thr Ala Thr Gln Ser
    65          70          75          80

aac att tgc gat gag gac agc gct aca gaa acc tgc tac tgaattc      286
Asn Ile Cys Asp Glu Asp Ser Ala Thr Glu Thr Cys Tyr
    85          90

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<210> 14
<211> 105
<212> DNA
<213> Homo sapiens

<220>
<221> CDS
<222> (1)..(105)

<400> 14
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Asp Leu Cys Lys Lys Cys Asp Pro Thr Glu Val Glu Leu Asp Asn Gln
    1           5           10          15

ata gtc act gcg actcaa agc aac att tgc gat gag gac agc gct aca      96
Ile Val Thr Ala Thr Gln Ser Asn Ile Cys Asp Glu Asp Ser Ala Thr
    20          25          30

gaa acc tgc
Glu Thr Cys
    35

105

<210> 15
<211> 61
<212> DNA
<213> Homo sapiens

<400> 15
gtcaggaaatgaaacgtat tgttctggtt gacaacaagt gcaagtgtgc tcgtattact 60
t
    61

<210> 16
<211> 198
<212> DNA
<213> Homo sapiens

<400> 16
gcgtatgcga cgataaggcc caaacggaga cctgtactgt tgccctcgtaa 60
actgcggatt cccggagta acaccctctc agtgcgctaa taaaggctgc tgtttgatg 120
acacggtagc gggcggtccg tggtgcttct accccaatac aattgacgtt cccctgaag 180
aagagtgcga gttttaag
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<210> 17
<211> 138
<212> PRT
<213> Homo sapiens

<400> 17
Asp Gln Glu Asp Glu Arg Ile Val Leu Val Asp Asn Lys Cys Lys Cys
    -1   1           5           10

Ala Arg Ile Thr Ser Arg Ile Ile Arg Ser Ser Glu Asp Pro Asn Glu
    15          20          25          30

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Asp Ile Val Glu Arg Asn Ile Arg Ile Ile Val Pro Leu Asn Asn Arg	35	40	45	
Glu Asn Ile Ser Asp Pro Thr Ser Pro Leu Arg Thr Arg Phe Val Tyr				
	50	55	60	
His Leu Ser Asp Leu Cys Lys Lys Cys Asp Pro Thr Glu Val Glu Leu				
	65	70	75	
Asp Asn Gln Ile Val Thr Ala Thr Gln Ser Asn Ile Cys Asp Glu Asp				
	80	85	90	
Ser Ala Thr Glu Thr Cys Ser Thr Tyr Asp Arg Asn Lys Cys Tyr Thr				
	95	100	105	110
Ala Val Val Pro Leu Val Tyr Gly Gly Glu Thr Lys Met Val Glu Thr				
	115	120	125	
Ala Leu Thr Pro Asp Ala Cys Tyr Pro Asp				
	130	135		

<210> 18

<211> 71

<212> PRT

<213> Homo sapiens

<400> 18

Asp Gln

1 5 10 15

Ser Glu Asp Pro Asn Glu Asp Ile Val Glu Arg Asn Ile Arg Ile Ile
20 25 30

Val Pro Leu Asn Asn Arg Glu Asn Ile Ser Asp Pro Thr Ser Pro Leu
35 40 45

Arg Thr Arg Phe Val Tyr His Leu Ser Asp Leu Cys Lys Lys Asp Glu
 50 55 60

Asp Ser Ala Thr Glu Thr Cys
65 70

<210> 19

<211> 49

<212> PRT

<213> Homo sapiens

<400> 19

Ser Arg

1

20 25 30

Asp Pro Thr Ser Pro Leu Arg Thr Arg Phe Val Tyr His Leu Ser Asp
 35 40 45

Leu

<210> 20
 <211> 12
 <212> PRT
 <213> Homo sapiens

<400> 20
 Asp Gln Lys Cys Lys Cys Ala Arg Ile Thr Ser Arg
 1 5 10

<210> 21
 <211> 14
 <212> PRT
 <213> Homo sapiens

<400> 21
 Asp Leu Cys Lys Lys Asp Glu Asp Ser Ala Thr Glu Thr Cys
 1 5 10

<210> 22
 <211> 36
 <212> PRT
 <213> Homo sapiens

<400> 22
 Ser Thr Tyr Asp Arg Asn Lys Cys Tyr Thr Ala Val Val Pro Leu Val
 1 5 10 15

Tyr Gly Gly Glu Thr Lys Met Val Glu Thr Ala Leu Thr Pro Asp Ala
 20 25 30

Cys Tyr Pro Asp
 35

<210> 23
 <211> 93
 <212> PRT
 <213> Homo sapiens

<400> 23
 Asp Gln Lys Cys Lys Cys Ala Arg Ile Thr Ser Arg Ile Ile Arg Ser
 1 5 10 15

Ser Glu Asp Pro Asn Glu Asp Ile Val Glu Arg Asn Ile Arg Ile Ile
 20 25 30

Val Pro Leu Asn Asn Arg Glu Asn Ile Ser Asp Pro Thr Ser Pro Leu
 35 40 45

Arg Thr Arg Phe Val Tyr His Leu Ser Asp Leu Cys Lys Lys Cys Asp
 50 55 60

Pro Thr Glu Val Glu Leu Asp Asn Gln Ile Val Thr Ala Thr Gln Ser
 65 70 75 80

Asn Ile Cys Asp Glu Asp Ser Ala Thr Glu Thr Cys Tyr
 85 90

<210> 24

<211> 35

<212> PRT

<213> Homo sapiens

<400> 24

Asp Leu Cys Lys Lys Cys Asp Pro Thr Glu Val Glu Leu Asp Asn Gln
 1 5 10 15

Ile Val Thr Ala Thr Gln Ser Asn Ile Cys Asp Glu Asp Ser Ala Thr
 20 25 30

Glu Thr Cys

35

<210> 25

<211> 22

<212> PRT

<213> Homo sapiens

<400> 25

Asp Gln Glu Asp Glu Arg Ile Val Leu Val Asp Asn Lys Cys Lys Cys
 1 5 10 15

Ala Arg Ile Thr Ser Arg
 20

<210> 26

<211> 66

<212> PRT

<213> Homo sapiens

<400> 26

Cys Ser Asp Asp Asp Asp Lys Ala Gln Thr Glu Thr Cys Thr Val Ala
 1 5 10 15

Pro Arg Glu Arg Gln Asn Cys Gly Phe Pro Gly Val Thr Pro Ser Gln
 20 25 30

Cys Ala Asn Lys Gly Cys Cys Phe Asp Asp Thr Val Arg Gly Val Pro
 35 40 45

Trp Cys Phe Tyr Pro Asn Thr Ile Asp Val Pro Pro Glu Glu Glu Cys
 50 55 60

Glu Phe
65

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<210> 27
<211> 421
<212> DNA
<213> Homo sapiens

<400> 27
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caccatacac gagcggAACc acggccgtgt agcatttgtt cctatcgtag gtgctgcagg 120
tttctgttagc gctgtcctca tcgcaaATgt tgctttgagt cgCAGTgact atctgattgt 180
ccagctctac ctctgttggc tcacacttct tacacagatc tgacaggtgg tatacgaagc 240
gtgtgcgcaa cggacttgta ggatctgaga tattctcccg gttattcagt gggacgatga 300
tacggatgtt acgttcgact atatcttcat ttgggtcctc tgagctacgg atgattctag 360
aagtaatacg agcacacttg cacttgtgt caaccagaac aatacgttca tcttcctgat 420
c                                         421

<210> 28
<211> 219
<212> DNA
<213> Homo sapiens

<400> 28
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tacgaagcgt gtgcgcAACg gacttgttagg atctgagata ttctcccggt tattcagtgg 120
gacgatgata cggatgttac gttcgactat atcttcattt gggtcctctg agctacggat 180
gattctagaa gtaatacggag cacacttgca ctctctgat                                219

<210> 29
<211> 140
<212> DNA
<213> Homo sapiens

<400> 29
gatctgacag gtggtatacg aagcgtgtgc gcaacggact tgttaggatct gagatattct 60
cccggttatt cagtgggacg atgatacggg tggtacgttc gactatatct tcatttgggt 120
cctctgagct acggatgatt                                         140

<210> 30
<211> 31
<212> DNA
<213> Homo sapiens

<400> 30
ctagaagtaa tacgagcaca cttgcacttc t                                         31

<210> 31
<211> 44
<212> DNA
<213> Homo sapiens

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<400> 31
aattcagcag gtttctgttag cggactcttc atccttctta caca 44

<210> 32
<211> 117
<212> DNA
<213> Homo sapiens

<400> 32
aattcagtcg gggtagcatg catcgggcgt aaggcagtt tccaccattt ttgtctctcc 60
accatacacg agcggAACCA cggccgtgt a gcatttttc ctatcgtagg tgctgca 117

<210> 33
<211> 282
<212> DNA
<213> Homo sapiens

<400> 33
tcagtagcag gtttctgttag cgctgtcctc atcgcaaatg ttgctttgag tcgcagtgac 60
tatctgattt tccagctcta cctctgttgg atcacacttc ttacacagat ctgacaggtg 120
gtatacgaag cgtgtgcgca acggacttgtt aggatctgag atattctccc ggTTATTCAg 180
tgggacgtatc atacggatgt tacgttcgac tatacttca tttgggtcct ctgagctacg 240
gatgattctta gaagtaatac gggcacactt gcacttctga tc 282

<210> 34
<211> 105
<212> DNA
<213> Homo sapiens

<400> 34
gcaggTTTCT gtacgcgtgt cctcatcgca aatgttgctt tgagtgcag tgactatctg 60
attgtccAGC tctacctctg ttggatcaca cttttacac agatc 105

<210> 35
<211> 61
<212> DNA
<213> Homo sapiens

<400> 35
ctagaagtaa tacgagcaca cttgcacttg ttgtcaacca gaacaatacg ttcatcttcc 60
t 61

<210> 36
<211> 205
<212> DNA
<213> Homo sapiens

<400> 36
aattctaaa actcgcactc ttcttcaggc ggaacgtcaa ttgtattggg gttagaagcac 60
cacggaaGCC ccgtaccgtg tcataaaac agcagcctt attagcgcac tgagagggtg 120
ttactccccc gaatccgcag ttttgcgtt cacgaggcgc aacagtacag gtctccgttt 180
ggcccttatac gtcgtcatcg ctgca 205

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<210> 37
<211> 13
<212> PRT
<213> Homo sapiens

<400> 37
Asp Gln Glu Asp Glu Arg Ile Val Leu Val Asp Asn Lys
1 5 10

<210> 38
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Illustrative peptide

<400> 38
Glu Asn Leu Tyr Phe Gln Ser
1 5

<210> 39
<211> 11
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Linker peptide

<400> 39
Lys Ala His Lys Val Asp Met Val Gln Tyr Thr
1 5 10

<210> 40
<211> 4
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Linker peptide

<400> 40
Val Gln Tyr Thr
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<210> 41
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Linker peptide

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<400> 41
Glu Lys Ala Val Ala Asp
 1           5

<210> 42
<211> 131
<212> DNA
<213> Homo sapiens

<220>
<221> CDS
<222> (1)..(78)

<400> 42
atg aaa ttc tta gtc aac gtt gcc ctt ttt atg gtc gta tac att tct      48
Met Lys Phe Leu Val Asn Val Ala Leu Phe Met Val Val Tyr Ile Ser
 1           5           10           15

tac atc tat gcg gat ccg agc tcg agt gct ctagatctgc agctggtaacc      98
Tyr Ile Tyr Ala Asp Pro Ser Ser Ala
 20           25

atggaattcg aagcttggag tcgactctgc tga                                131

<210> 43
<211> 26
<212> PRT
<213> Homo sapiens

<400> 43
Met Lys Phe Leu Val Asn Val Ala Leu Phe Met Val Val Tyr Ile Ser
 1           5           10           15

Tyr Ile Tyr Ala Asp Pro Ser Ser Ala
 20           25

<210> 44
<211> 4
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Intracellular
      targeting signal

<400> 44
Lys Asp Glu Leu
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<210> 45
<211> 16
<212> PRT
<213> Homo sapiens

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<400> 45
Ala Ile Gln Asp Pro Arg Leu Phe Ala Glu Glu Lys Ala Val Ala Asp
    1           5           10          15

<210> 46
<211> 61
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
      oligonucleotide

<400> 46
gatcaggaag atgaacgtat tgttctggtt gacaacaagt gcaagtgtgc tcgtattact 60
t                                         61

<210> 47
<211> 61
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
      oligonucleotide

<400> 47
ctagaagtaa tacgagcaca cttgcacttg ttgtcaacca gaacaatacg ttcatcttcc 60
t                                         61

<210> 48
<211> 31
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
      oligonucleotide

<400> 48
gatcagaagt gcaagtgtgc tcgtattact t                                         31

<210> 49
<211> 31
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
      oligonucleotide

<400> 49
ctagaagtaa tacgagcaca cttgcacttc t                                         31

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<210> 50
<211> 61
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
      oligonucleotide

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gatcaggaag atgaacgtat tttctggtt gacaacaagt gcaaggccgc tcgtattact 60
t                               61

<210> 51
<211> 61
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
      oligonucleotide

<400> 51
ctagaagtaa tacgagcgga cttgcacttg ttgtcaacca gaacaatacg ttcatcttcc 60
t                               61

<210> 52
<211> 61
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
      oligonucleotide

<400> 52
gatcaggaag atgaacgtat tttctggtt gacaacaagt gcaagggtgc tcgtattact 60
t                               61

<210> 53
<211> 61
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
      oligonucleotide

<400> 53
ctagaagtaa tacgagcaac cttgcacttg ttgtcaacca gaacaatacg ttcatcttcc 60
t                               61
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<210> 54
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<220>
<223> Description of Artificial Sequence: Synthetic
      oligonucleotide

<400> 54
ctagaatcat ccgtagctca gaggacccaa atgaagatat agtcgaa          47

<210> 55
<211> 58
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
      oligonucleotide

<400> 55
gatacggatg ttacgttcga ctatatcttc atttgggtcc tctgagctac ggatgatt      58

<210> 56
<211> 49
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
      oligonucleotide

<400> 56
cgtaaacatcc gtatcatcgt cccactgaat aaccgggaga atatctcag          49

<210> 57
<211> 49
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
      oligonucleotide

<400> 57
cgtaaacatcc gtatcatcgt cccactgaat aaccgggagc acatctcag          49

<210> 58
<211> 49
<212> DNA
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<220>
<223> Description of Artificial Sequence: Synthetic
      oligonucleotide

<400> 58
acggacttgt aggatctgag atattctccc ggttattcag tgggacgat           49

<210> 59
<211> 49
<212> DNA
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<223> Description of Artificial Sequence: Synthetic
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<400> 59
acggacttgt aggatctgag atgtgctccc ggttattcag tgggacgat           49

<210> 60
<211> 44
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
      oligonucleotide

<400> 60
atcctacaag tccgttgcgc acacgcttcg tataaccacct gtca           44

<210> 61
<211> 33
<212> DNA
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<220>
<223> Description of Artificial Sequence: Synthetic
      oligonucleotide

<400> 61
gatctgacag gtggatatacg aagcgtgtgc gca           33

<210> 62
<211> 60
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
      oligonucleotide

<400> 62
gatctgtgtga agaagtgtga tccaaacagag gtagagctgg acaatcagat agtcactgca 60

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<210> 63
<211> 44
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic oligonucleotide

<400> 63
gatctgtgta agaaggatga ggacagcgct acagaaacct gctg 44

<210> 64
<211> 44
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic oligonucleotide

<400> 64
aattcagcag gtttctgttag cgctgtcctc atccttctta caca 44

<210> 65
<211> 62
<212> DNA
<213> Artificial Sequence

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<223> Description of Artificial Sequence: Synthetic oligonucleotide

<400> 65
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tg 62

<210> 66
<211> 62
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic oligonucleotide

<400> 66
aattcacacgc tcatccctcg cgtcgcaagg ttctgttagcg ctgtcctcat ctttcttaca 60
ca 62

<210> 67
<211> 59

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<212> DNA
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<220>
<223> Description of Artificial Sequence: Synthetic
      oligonucleotide

<400> 67
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<210> 68
<211> 59
<212> DNA
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<223> Description of Artificial Sequence: Synthetic
      oligonucleotide

<400> 68
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<210> 69
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<400> 69
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oligonucleotide

<400> 71
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<400> 72
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<210> 73
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<212> DNA
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<400> 73
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<210> 74
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      oligonucleotide

<400> 74
actcaaagca acatttgcga tgaggacagc gctacagaaa cctgca                                         46

<210> 75
<211> 57
<212> DNA
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<400> 75
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<210> 76
<211> 59
<212> DNA
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<220>
<223> Description of Artificial Sequence: Synthetic
      oligonucleotide

<400> 76
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<210> 77
<211> 48
<212> DNA
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<223> Description of Artificial Sequence: Synthetic
      oligonucleotide

<400> 77
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<210> 78
<211> 50
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
      oligonucleotide

<400> 78
acaaaaaatgg tggaaactgc cttacgccc gatgcattgt atccggactg 50

<210> 79
<211> 69
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
      oligonucleotide

<400> 79
aattcagtcc ggatagcatg catcgggcgt aaggcagtt tccaccattt ttgtctctcc 60
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<210> 80
<211> 62
<212> DNA
<213> Artificial Sequence

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<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<400> 80
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tg 62

<210> 81
<211> 81
<212> DNA
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<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<400> 81
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ttttgtctct ccaccataca c 81

<210> 82
<211> 88
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<400> 82
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tccaaagtgc a g t g t g c t c g t a t t a c t t 88

<210> 83
<211> 88
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<400> 83
ctagaagtaa tacgagcaca cttgcacttg gagtcagcga cggccttctc ttcggcgaac 60
agcctcggtt cttggatggc agcgacct 88

<210> 84
<211> 10
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
targeting peptide

<400> 84
Cys Ala Ala Pro Lys Lys Lys Arg Lys Val
1 5 10

<210> 85
<211> 19
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
targeting peptide

<400> 85
Cys Ala Ala Lys Arg Pro Ala Ala Ile Lys Lys Ala Gly Gln Ala Lys
1 5 10 15
Lys Lys Lys

<210> 86
<211> 4
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Intracellular
targeting signal

<400> 86
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<210> 87
<211> 77
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<400> 87
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actgcggatt cccggga 77

<210> 88
<211> 66
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<400> 88
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gctgca 66

<210> 89
<211> 72
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<400> 89
gtaaacacct ctcagtgcgc taataaaggc tgctgtttt 60
ccgtggtgct tc 72

<210> 90
<211> 72
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

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cgggaaatccg ca 72

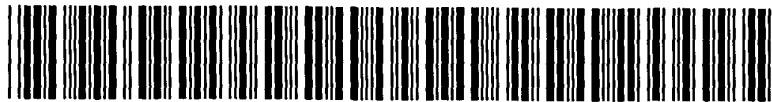
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oligonucleotide

<400> 91
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<210> 92
<211> 68
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic



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